Exploring Women's Preferences for Labor Epidural Analgesia

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Abstract

The purpose of this study was to explore demographic factors related to women's prenatal preferences for using an epidural during labor. Women recruited from prenatal classes provided data for this descriptive correlational study. Women with the most education, income, and parity indicated greatest preference for epidural analgesia. Thus, these women may be comfortable with the technology and most likely to be willing to pay for epidurals and to select care providers who provide epidural anesthesia. In this sample, prenatal preference for an epidural was not predictive of actual use, although it has been shown to be predictive in previous research.

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An increasing number of women are using epidural analgesia as a pain-management strategy during labor. Of the approximately 4 million women who give birth each year in the United States, an estimated 1.6 million may use labor epidural analgesia (Lieberman, 1999). While researchers and practitioners have debated the desirability, effectiveness, and outcomes of labor epidurals (Halpern, Leighton, Ohlsson, Barrett, & Rice, 1998; Lieberman, 1999; Walker & O'Brien, 1999), hospitals and providers have enhanced their availability, and many consumers have voiced demands for epidural analgesia for labor. The growing popularity of epidural analgesia as a method for labor-pain management has prompted interest in factors that contribute to the preference many women have for this intervention in spite of the known risks (King, 1997; Rooks, 1999; Thorp & Breedlove, 1996).

As consumers of health care, women historically have

requested relief from childbirth pain (Pitcock & Clark, 1992). Since ether anesthesia became available, consumer demand has influenced pain-relief options during labor. From the National Twilight Sleep Association in the early 1900s through the Lamaze-prepared childbirth movement that originated later in that century, women have pressured the health care community to offer options for pain relief during labor (Pitcock & Clark, 1992). More recently, consumer requests appear to have prompted a growing trend for labor epidural analgesia. Certified nurse midwives (CNMs) have traditionally focused on client support for comfort rather than on technological measures. More than half (53%) of 1,605 CNMs who responded to a nationwide survey had a negative attitude about growing epidural use in CNM practice, with 64% expressing concerns about the growing consumer demand for epidural analgesia (Graninger & McCool, 1998). The majority of CNMs in this survey (59%) felt that their marketability as providers of maternity care was related to providing epidurals. The most common factor in decisions to use labor epidurals was "patient request" (Graninger & McCool, 1998, p. 257). This survey suggests that, in spite of concerns about epidurals, CNMs sense growing consumer pressure for labor epidural analgesia. Thus, the purpose of the study described in this paper was to explore demographic factors related to women's prenatal preferences for using an epidural during labor.

Labor Pain and Epidurals

While some women may experience labor pain as mild, most find labor pain intense when compared to pain from other causes (Melzack, 1993). Because of the multidimensional nature of labor pain, a variety of pain-management techniques may be needed for pain management (Lowe, 1996). Epidural analgesia is an effective pharmacological method of pain relief available for use during labor (King, 1997; Mayberry & Genarro, 2001). Epidural analgesia provides pain relief with minimal motor block during labor. In contrast, for operative procedures, epidural anesthesia may be administered in a manner to significantly alter motor function in order to provide a complete sensory block (Youngstrom, Baker, & Miller, 1996).

Like other invasive interventions, the use of epidural analgesia presents risks. The initiation of epidural analgesia includes a cascade of other interventions that may include frequent or continuous monitoring of mother and fetus and parenteral administration of fluids (Association of Women's Health, Obstetric and Neonatal Nurses, 2001). Longer labors, oxytocin administration, instrumental deliveries, maternal fevers, maternal hypotension, and altered neonatal behavior that influence breastfeeding have been associated with epidural analgesia (Halpern et al., 1998; Ransjo-Arvidson et al., 2001; Rooks, 1999; Thorp & Breedlove, 1996; Walker & O'Brien, 1999). Mann and Albers (1997) suggest that women may not be fully informed of these risks when giving consent during labor. In fact, "informed consent" forms may show a bias if they dwell on the advantage of high-tech interventions. In seeking pain relief during labor, women may not understand the possible risks of this procedure. Simultaneously, they may not understand the potential benefits of a nonmedicated birth. Making an informed choice of labor-pain relief strategies requires that women know the risks, benefits, and evidence supporting effectiveness.

Exploring the risks and benefits of epidural analgesia during the prenatal period is beneficial because it provides time for thoughtful discussion (Mann & Albers, 1997). Labor-pain management is a concern for women approaching labor and a topic of interest in prenatal classes. In examining women's prenatal preferences toward epidurals, Goldberg, Cohen, and Lieberman (1999) asked nulliparas attending prenatal classes to indicate their attitudes about and intention to use labor epidural analgesia. When their prenatal intentions were compared to actual epidural use in labor, women who planned to use an epidural during labor were significantly more likely to use one in labor than those who did not plan to use an epidural. In that sample, 78.2% of the 303 women who participated in the study had epidural analgesia during labor. The authors of the study suggest that women who request epidural analgesia may not have more painful labors. Instead, they request an epidural early because they have planned on it. Prenatal preference influenced use of labor epidurals more than the events of labor.

The importance of prenatal preferences for labor epidural warrants further examination of factors that may be considered in determining a preference for labor-pain management. With the growing trend for epidural analgesia during labor, gaining more knowledge about the

prenatal preferences that women have prior to labor would assist childbirth educators and other health care providers in educating and supporting women as they prepare for labor.

Study Design and Methods

For this descriptive study, a secondary analysis was conducted using data from my own previous longitudinal study (Stark, 2000, 2001). Data from the original study were collected in a nine-month period during 1997–1998 in southwestern Michigan.

Data from all 57 participants in the original study were included in this analysis. The sample was composed of mostly white (n = 54, 94.7%) primigravidas (n = 51, 89.5%), who had attended at least some college (n = 54, 94.7%), were married (n = 53, 93%), and had a mean age of 29.1 years (*SD* = 4.5) (Stark, 2000). All were attending prenatal classes and in their third trimester of pregnancy. A university and two hospital human subjects review boards approved the original study. For the secondary analysis, approval was received from a college's institutional review board.

While women's prenatal preference for using epidural analgesia was the primary variable of interest for this study, data indicating actual epidural use during labor were also available. Of the 56 women who completed the longitudinal study, 44.6% (n = 25) used labor epidural anesthesia. The cesarean rate for this sample of 56 women was 19.6% (n = 11), with most (72.7%, n = 8) being unscheduled. Most of the women delivered at one tertiary hospital (94.6%, n = 53). At this hospital, epidurals were available to all laboring women regardless of payer. The other three women who did not deliver at the tertiary hospital delivered at three other hospitals. One woman withdrew from the study following a preterm birth.

The major variable of interest for this study was prenatal preference for using an epidural for pain management in labor. Gravidas (mean gestational age = 31.9 weeks, *SD* = 2.3) were asked to answer the question "How likely are you to use an epidural for pain during labor?" by marking a 100mm visual analogue scale anchored by "not at all" and "most likely." The possible range was 0 to 100. Using a visual analogue scale (VAS) allowed women to give a subjective estimation of their experience. Reproduction and explanation of horizontal VAS was carefully given to provide a reliable, valid, and sensitive measure.

All of the women in the study were enrolled in childbirth education classes that promoted active participation in nonpharmacological pain-management strategies. Demographic variables such as age, education, income, race, employment, marital status, and parity were obtained from a questionnaire. After delivery, medical records were examined and provided information about epidural use and type of delivery.

Data were entered and analyzed on SPSS-PC (8.0.2). Appropriate descriptive statistics were computed; appropriate parametric and nonparametric tests were used to test relationships between the variables of interest. An alpha level of .05 was designated a priori as a level of statistical significance. The observed power for this sample with this data ranged between .60 and .70.

Results

On the variable of primary interest, women in this sample indicated a wide range (0 to 98) in their prenatal preference for using an epidural for labor (mean = 35.3, *SD* = 28.1). Overall, the group showed a trend in the direction of not using an epidural. Gravidas with higher parity were more likely to estimate greater likelihood of using an epidural (r = .28, p = .036) (see Table). However, most of the women in the sample were primigravidas; thus, this finding should be interpreted cautiously. Women with graduate degrees estimated that they were significantly more likely to use an epidural than women with the least education, those with high school or some college education (F = 4.06, df = 2, 54, p = 0.023). When income was considered, women with annual incomes of $50,000 or higher had significantly greater prenatal preference for epidural analgesia for labor when

Table Relationships between Prenatal Estimation of Likelihood of Using an Epidural and Other Variables

Variable	Test	p =
Parity	r = .28	.036
Education	F = 4.06, df = 2,54	.023
Income	t = -2.26, df = 55	.028
Age	r = -.08	ns
Hours Worked Each Week	r = .18	ns
Marital Status	t = .95, df = 55	ns
Race	t = -.06, df = 55	ns
Gestational Age	r = .14	ns

compared to women with lower incomes (t = -.2.26, df = 55, p = .028). The relationships between prenatal preference for labor epidural and age, number of hours worked each week, marital status, race, and gestational age at data collection were not significant.

The relationship between prenatal preference for epidural analgesia and actual epidural use during labor was considered in this exploratory study. Because women who had scheduled cesareans would not have the opportunity to use epidural analgesia during labor, they were eliminated from this analysis, leaving 53 women who labored prior to either a vaginal or unscheduled cesarean birth. No significant relationship occurred between prenatal preference for using a labor epidural and actual use of epidural analgesia in this sample. Women who did not use an epidural during labor and those who did had similar prenatal preferences for using an epidural during labor (t = −.67, df = 51, p = ns). Women who did not use an epidural (mean = 32.8, *SD* = 25.1) had a lower mean than women who did use an epidural (mean = 37.8, *SD* = 32.0), but the difference was not significant.

In summary, the demographic variables that were associated with greater prenatal preference for using an epidural during labor in a sample of women attending childbirth education classes in the third trimester of pregnancy were higher parity, more education, and higher income. Age, employment, marital status, and race were not significantly related to prenatal preference for using an epidural. For the women who labored before giving birth (n = 53), no difference occurred between those who did and those who did not actually use an epidural in their prenatal preference for using labor epidural analgesia.

Discussion

As each woman's experience of labor pain is unique, so are the expectations and resources that each woman brings to childbirth education and birth. The findings of this study suggest that socioeconomic influences in this sample could account for the difference in prenatal preferences for epidural analgesia for labor in women enrolled in childbirth education classes. This is consistent with other research. In a study of epidural use, researchers found that women with private insurance and those receiving care from an obstetrician used epidurals more frequently than women without private insurance and those receiving midwifery care (Hueston, McClaflin, Mansfield, & Rudy, 1994). Women with more education and income would be likely to have private insurance, suggesting that they may be more likely to plan to use epidural analgesia because they are not as likely to be limited by financial concerns as women with fewer economic resources.

Gathering information about labor, birth, and the options available during this time of predicted pain is important in preparing for the birth experience. Yet, women attending childbirth education classes come to prenatal classes with various beliefs, resources, and knowledge. Women with the most education, income, and experience may be ones most likely to have the ability to pay for the intervention and most comfortable with the associated technology. This assertion is supported in that those most likely to have early comfort in the use of new interventions or products have been identified as having higher social status, more formal education, and higher self-efficacy (Rogers, 1995). In this study, women with higher education levels, more experience with childbirth (parity), and higher incomes were the ones who indicated they were most likely to use an epidural during labor. Women with lower education levels, less experience, and lower incomes may have less knowledge and be more hesitant to try a new technologic, invasive intervention. Since the number of multigravidas in this study was small, the role of experience must be considered cautiously. Even with these differences, it should be noted that the Maternity Center Association's "Listening to Mothers Survey" identified that, overall, women actually knew very little about the risks associated with epidurals (Maternity Center Association, 2002).

In this sample of women taking prenatal classes, no relationship existed between the participants' prenatal preference for epidural analgesia and actual use during labor. Thus, their childbirth educators may have had a window of opportunity to assure that the women were fully informed of the consequences of their choices. The labor process can be variable, complex, and uncertain. Preparing for such an event may seem difficult and overwhelming. Some women may plan prenatally to use an epidural as a means of gaining some predictability for an event that may seem uncertain. The actual need or opportunity for using an epidural may not have materialized during labor. Gaining more information and coping

skills as their prenatal classes progressed also may have led some women in this sample to use other measures to cope with pain. Others may have found labor more challenging than expected. This offers one explanation why no relationship existed between prenatal preference for using an epidural and actual use in this sample. Prenatal educators help women to prepare for labor by providing knowledge and skills for labor so that invasive techniques can be avoided.

In contrast to another study that found women who prenatally decided to use an epidural were more likely to use one in labor than other women (Goldberg et al., 1999), this study did not support those findings. The epidural rate was higher for the Goldberg study (78.2%) than for this study (44.6%). Different measures, providers, and anesthesia coverage or community expectations could explain the differences between the two samples in the women's prenatal expectations and their actual use of epidural analgesia.

While women have ideas during the prenatal period about how they might manage labor, the reality of labor brings many new and confounding factors that can alter their plans. Helping women make an informed decision at a time of acute pain is a challenge. While women come with expectations about the birth experience, they are often confronted with a different reality for which they may feel unprepared (DiMatteo, Kahn, & Berry, 1993). Anesthesia availability, staffing, labor support, or a difficult labor can alter labor plans. Providing additional information, supporting couples' informed decisions, and helping them reframe unexpected events are important roles for prenatal educators, doulas, and care providers.

Several limitations of this study should be considered. The study was a secondary analysis; thus, not all factors that could influence epidural use were available. The sample size was small, limiting the type of data analysis that could be used and the findings of the study.

Implications for Practice

Some women and their partners come to prenatal education classes having attained a great deal of information from reliable sources, while others have limited information. Some of the difference may relate to socioeconomic factors. The wide range of knowledge and preferences that women and their partners bring to childbirth education classes require that educators assess this carefully and early so that relevant and accurate information can be provided (see Appendix).

In summary, women plan and prepare for labor, a life-changing event. Childbirth educators can assist all women in making this important decision by assessing women's knowledge and preferences and presenting accurate, adequate, and relevant information on labor-management strategies that empower women for birth and mothering (Lamaze International Inc., 2002).

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Appendix Childbirth Education and the Topic of Epidurals

For expectant parents to be fully informed about their choices, childbirth educators should engage in a variety of educational strategies throughout a class series. These strategies should assure expectant parents understand that epidurals:

- decrease the opportunity for women's personal growth and empowerment through birth;
- medicalize birth and frequently trigger a cascade of interventions, including cesarean births;
- shift labor emphasis from supporting the mother to supporting the technology;
- may trigger postpartum procedures that hamper breastfeeding or bonding; and
- increase health-care costs.

Educators should also be aware of current literature such as a recent article in the *American Journal of Obstetrics and Gynecology* titled "Informed Consent and Birth: Protecting the Pelvic Floor and Ourselves" (O'Boyle, Davis, & Calhoun, 2002), a paper that supports elective cesarean birth. The article makes a case for using the consent form as a means to alert consumers that vaginal birth might damage the pelvic floor. The paper suggests a bias in that no mention is made of informing the consumer of the benefits of decreasing epidurals and related instrumental deliveries. Nor does it inform the consumer that the use of perineal massage, kegal exercises, and good nutrition are other ways women might be assisted to maintain their perineum. Thus, a useful class exercise might be for the childbirth educator to present several different consent forms for comparison and interpretation.

Research is severely lacking in some of the following considerations:

- How can childbirth educators effectively conduct classes that teach women to raise questions and explore issues of concern with their care providers?
- How can childbirth educators share information early enough for women to knowledgeably choose care providers who support their birth preferences?
- In relation to epidurals, how much or in what ways do the labor care providers influence a change in a woman's prenatal preferences?
- What teaching strategies are most effective in helping a woman value her body and trust the process of birth?